Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Western Regional Office • 436 Dwight Street, Springfield MA 01103 • 413-784-1100

Date: **March 15, 2016**

Mr. Phil Cherry
Northeast Biodiesel Company, LLC
179 Silvio O. Conte Drive
PO Box 688
Greenfield, MA 01302

RE: Greenfield
Transmittal No.: X267879
Application No.: WE-15-014
Class: *SM80-7*
FMF No. 439424
AIR QUALITY PLAN APPROVAL

Dear Mr. Cherry:

The Massachusetts Department of Environmental Protection ("MassDEP"), Bureau of Waste Prevention, has reviewed your Limited Plan Application ("Application") listed above. This Application concerns the proposed construction and operation of two biodiesel processors and associated ancillary equipment at your biodiesel manufacturing facility located at 179 Silvio O. Conte Drive (Greenfield Industrial Park Lots 24E, 24F and 24G) in Greenfield, Massachusetts ("Facility").

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 "Air Pollution Control," regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP's review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator ("Permittee") must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Northeast Biodiesel Company, LLC ("Northeast Biodiesel" or "Facility") has constructed the first phase of a biodiesel production plant at 179 Silvio O. Conte Drive in Greenfield, MA. The plant includes a biodiesel manufacturing unit which is built and delivered as a turnkey system on three interconnecting skids. The facility plans to add a second unit in the future. The plant also includes various ancillary storage tanks and loading and unloading operations. The facility plans to produce up to 3.5 million gallons per year of biodiesel.

The pollutant of concern is mainly methanol which is a volatile organic compound (VOCs) and a hazardous air pollutant (HAP). Methanol is added to used vegetable-based oil in the presence of a catalyst (sodium methylate or potassium methylate) and, through the process of transesterification, is converted to biodiesel with glycerin as a byproduct.

Northeast Biodiesel holds two previous plan approvals:

Plan Approval #	Dated
#1-P-07-014	May 10, 2007
#1-P-11-021	March 6, 2012

The equipment was never constructed as proposed in Plan Approval #1-P-07-014. Northeast Biodiesel later obtained Plan Approval #1-P-11-021. However, the currently installed biodiesel processing unit does not meet the specifications of the Plan Approval and so MassDEP determined that the facility failed to apply for a plan approval prior to installing the equipment. This resulted in a Notice of Noncompliance, dated November 12, 2015, from the MassDEP with the requirement that Northeast Biodiesel submit a new plan approval application and pay double the applicable fee.

A Notice of Violation (NOV) dated May 8, 2015 from the United States Environmental Protection Agency (USEPA) included a reporting requirement pursuant to Section 114(a)(1) of the Clean Air Act.

The proposed biodiesel manufacturing facility will include the following equipment:

- Two (2) - 20,000 gallon vegetable oil or tallow aboveground storage tank(s);
- Four (4) aboveground storage tanks each containing methanol, glycerin, sodium methylate/potassium methylate, and biodiesel (each listed in Table 1);
- Green Fuels FuelMatic Biodiesel Processor Unit #1;
- Green Fuels FuelMatic Biodiesel Processor Unit #2;
- 55-gallon drums and/or 275 gallon totes of methanol for purification column resin regeneration.

Each of the Green Fuels FuelMatic Biodiesel Processor Units (Green Fuels unit) will consist of the following equipment[1]:

- (1) - 1,300 liter stainless steel electrically heated preheat tank where used vegetable oil is heated to 149^{o}F, vented to atmosphere;
- (1) - 650 liter transesterification reactor with process vent;
- (1) - 980 liter glycerol separator with process vent;
- (1) - 1,300 liter electrically heated buffer tank with process vent;
- (4) - purification columns, each 500 liters, containing an ion exchange resin;
- (1) - 270 liter residual methanol removal vessel (stripper/flash drum) with process vent);
- (1) – single pass shell and tube condenser;
- (1) - condenser diffuser;
- (1) - 92 liter methanol collection vessel for recycling methanol back into the process.

Methanol is released at the following emission points:

- Through process vents on each reactor, separation tank, buffer tank and residual methanol removal vessel (stripper/flash drum). Engineering estimates of VOC/HAP emissions from these process vents were made using assumed air sparger[2] flow rates and saturation properties of methanol at 10^{o}F;
- Through transfer of methanol during regeneration of the ion exchange resin within each of the four (4) biodiesel purification columns (determined using the USEPA TANKS 4.0.9d program);
- Various tank breathing and working losses (determined using the USEPA TANKS 4.0.9d program). Individual tanks are listed as emission units in Table 1;
- Finished biodiesel and glycerin tank truck loading losses (determine by use of the USEPA AP-42, Chapter 5.2, Transportation and Marketing of Petroleum Liquids); and
- Fugitive emissions (determined by use of the USEPA Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, November 1995).

Emissions from the transesterification reactor, separation, buffer, and residual methanol removal vessel (stripper/flash drum) process vents will be controlled with a designed 87% collection efficiency using two (2) shell and tube condensers (one on each Green Fuels unit). The chilled condenser for Unit #1 (emission unit (EU) 1) will be a Bell & Gossett single pass shell and tube condenser with a Mokon ALT-2 Iceman portable glycol chiller. The condenser will be single pass and will have a surface area of 23 square feet. The second Green Fuels unit (EU 2), when it is constructed, will have an equivalent condenser/chiller design. Each chilled condenser exhaust stream will be equipped with a spark arrestor.

Each Green Fuels unit will have a total of four purification columns. Of the four, two "primary" columns will be in service at a time while the other two columns serve as "guard" pairs. Under

[1] The transesterification process is heated electrically. There are no boilers at the facility.

[2] One (1) sparger will be on each buffer vent and residual methanol removal vessel (stripper/flash drum) vent.

full operation, Northeast Biodiesel estimates that the two primary columns will require regeneration every two weeks, at which time the two guard columns will become the new primary columns. The facility estimates that 2,867 gallons of methanol will be used per year per processor unit (106 gallons per column regeneration). During the regeneration process, tubing from the column vents will be connected to a 55-gallon drum or 275 gallon tote of methanol. The methanol will be circulated through the columns in a closed loop system and returned to another drum or tote for off-site processing. Northeast Biodiesel estimated the working losses during the transfer of methanol from a 55-gallon drum and determined that the methanol emissions from this process are insignificant (approximately 4 pounds per year).

Northeast Biodiesel does not plan to utilize an acid pretreatment system at this time for pre-treating used oil. The facility will notify the MassDEP of any plans to add an acid pretreatment system and will provide an assessment of the potential to emit VOC/HAPs from this process. Biodiesel that is produced for sale must meet the American Society for Testing and Materials (ASTM) standards to be sold into the marketplace.

Applicable Regulations

All operations are subject to the visible emission requirements of 310 CMR 7.06, the dust, odor, construction and demolition requirements of 310 CMR 7.09 and the noise reduction requirements of 310 CMR 7.10. The facility is located indoors within an industrial park, is approximately 1,200 feet from the nearest residence, and is buffered by woods so that noise is not expected to be an issue.

The facility has stated that the Environmental Protection Agency (EPA) New Source Performance Standards (NSPS), *Standards of Performance for VOC Emissions from Synthetic Organic Chemical Manufacturing Industry ("SOCMI") Distillation Operations* (40 CFR Part 60, Subpart NNN) is applicable. The facility has also stated in the application to this Plan Approval that *Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006* (40 CFR Part 60, Subpart VVa) is applicable. Since MassDEP has not accepted delegation for Subpart NNN or VVa for sources which are not subject to 310 CMR Appendix C, the Permittee is advised to consult with EPA Region 1 at 5 Post Office Square, Suite 100, Boston, MA 02109-3912, telephone: (617) 918-1111. Other applicable requirements may include notification, record keeping, and reporting requirements.

The 50,000 gallon biodiesel storage tank is not subject to 40 CFR Part 60 Subpart Kb since this tank has three (3) equal compartments, roughly 17,000 gallons each, which are independent of each other.

Best Available Control Technology (BACT)

In establishing the emission limits contained in Table 2 herein, BACT for this project is considered to be the following:

- the use of a chilled condenser on each Green Fuels unit with a condenser exit (product side) temperature equal to or less than 10 ^{o}F;
- a maximum total air sparger flow rate of 13 standard cubic feet per minute on each Green Fuels unit;
- the implementation of a facility-wide Leak Detection and Repair (LDAR) program; and
- best management practices for handling VOC and HAP containing materials.

2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

Table 1

EU#	Description	Design Capacity	Pollution Control Device (PCD)
1	Green Fuels America, Inc. FuelMatic GSX 20	5,000 gallon per day biodiesel output	PCD #1 - Glycol Condenser #1 Bell & Gossett model # CHXS 6241L shell & tube condenser with a Mokon ALT-2 Iceman portable glycol chiller
2	Green Fuels America, Inc. FuelMatic GSX 20	5,000 gallon per day biodiesel output	PCD #2 - Glycol Condenser #2 Bell & Gossett model # CHXS 6241L shell & tube condenser (or equivalent) with a Mokon ALT-2 Iceman portable glycol chiller (or equivalent)
3	Methanol Storage Tank Tank ID #V-1060 Aboveground	10,000 gallons	none
4	Glycerin Storage Tank Tank ID #V-3030 Aboveground	10,000 gallons	none
5	Sodium Methylate/Potassium Methylate Storage Tank Tank ID #V-1050 Aboveground	10,000 gallons	none
6	Biodiesel Storage Tank with 3 independent compartments, each equal in volume	50,000 gallons total	none

Table 1 Key:

EU# = Emission Unit Number
PCD = Pollution Control Device
N/A= not applicable

3. APPLICABLE REQUIREMENTS

A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2 below:

Table 2

EU#	Operational / Production Limit	Air Contaminant	Emission Limit
1	Biodiesel Production: ≤ 1,750,000 gallons of biodiesel produced per year; Methanol usage [1]: ≤ 250,390 gal/yr.; ≤ 50,078 gal/mo.; Glycol Chilled Condenser (PCD #1): • Total air sparger flow rate ≤ 13 scfm; • Coolant flow ≥ 1.9 gal/min; • Condenser exit (product side) temperature: ≤ (-12.2 °C/+ 10°F) as averaged over any 1-hour period of operation.	VOC/ total HAPs	3.75 TPY 0.75 TPM
2	Biodiesel Production: ≤ 1,750,000 gallons of biodiesel produced per year; Methanol usage [1]: ≤ 250,390 gal/yr.; ≤ 50,078 gal/mo.; Glycol Chilled Condenser (PCD #2): • Total air sparger flow rate ≤ 13 scfm; • Coolant flow ≥ 1.9 gal/min; • Condenser exit (product side) temperature: ≤ (-12.2 °C/+ 10°F) as averaged over any 1-hour period of operation.	VOC/ total HAPs	3.75 TPY 0.75 TPM
Facility-wide	-	VOC/ total HAPs	9.99 TPY 2.0 TPM

Table 2 Key:
EU# = Emission Unit Number
VOC = Volatile Organic Compounds
TPM = tons per month
≤ = less than or equal to
gal/yr = gallons per year
scfm = standard cubic feet per minute
°C = degrees Celsius
Total HAPs = total Hazardous Air Pollutants
TPY = tons per consecutive12-month period
gal/mo = gallons per month
°F = degrees Fahrenheit
gal/min = gallon per minute
≥ = greater than or equal to

Table 2 Notes:
1 – not including methanol used for purification column regeneration.

B. COMPLIANCE DEMONSTRATION

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5 below:

Table 3

EU#	Monitoring and Testing Requirements
1	1. The Permittee shall, within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of EU 1, perform the test methods and procedures contained in 40 CFR §60.664 for purposes of demonstrating compliance with Table 2 above and 40 CFR §60.662(c). Northeast Biodiesel shall submit a pretest protocol to MassDEP for review at least 45 days prior to the anticipated test date.
1, 2	2. The Permittee shall monitor, for each Green Fuels America, Inc. FuelMatic GSX20 processor, the amount of biodiesel produced on a monthly and 12 consecutive month period.
	3. The Permittee shall monitor, for each Green Fuels America, Inc. FuelMatic GSX20 processor, the gallons of methanol used on a daily basis.
	4. The Permittee shall install and maintain instrumentation to continuously monitor the temperature at the exit (product side) of each glycol chilled condenser (PCD #1 and PCD #2). The recorder shall have an accuracy of +/- 1% of the temperature being monitored expressed in degree Celsius or +/- 0.5 ^{o}C, whichever is greater.
	5. The Permittee shall install and maintain instrumentation to continuously monitor the coolant flow rate to each glycol chilled condenser (PCD #1 and PCD #2).
	6. The Permittee shall install and maintain an alarm system that will give an audible and visual indication to the control room operator whenever the temperature measured at the exit (product side) of PCD #1 and/or PCD #2 is greater than (-12.2 ^{o}C/+ 10 °F), in which case the control room operator will take immediate corrective action.
	7. The Permittee shall install, operate and maintain a low-flow alarm system on the Mokon ALT-2 Iceman portable glycol chiller, supplying each condenser. The alarm must give an audible and visual indication to the control room operator when the glycol chiller flow rate is less than 1.9 gallons per minute.
	8. The Permittee shall, on a monthly basis: a. test the coolant temperature alarm; b. test the coolant low-flow alarm; and c. calibrate all flow meters.

Table 3	
EU#	**Monitoring and Testing Requirements**
1, 2	9. The Permittee shall install and maintain instrumentation to monitor the air flow rate to each air sparger on EU 1 and EU 2.
	10. The Permittee shall monitor, and adjust as necessary, the total air sparger flow rate to each Green Fuels America, Inc. FuelMatic GSX20 processor on a daily basis and log the original and adjusted flow rates.
3, 4, 5, 6	11. The Permittee shall monitor the throughput (gallons) for each storage tank on a daily basis.
Facility-wide	12. The Permittee shall, within 180 days of initial start-up, develop and implement a facility leak detection and repair (LDAR) program using the procedures of 40 CFR Part 60 Subpart VVa, as applicable. A copy of the plan shall be kept at the facility for MassDEP inspection.
	13. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13
	14. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.

Table 3 Key:

EU# = Emission Unit Number
% = Percent
^{o}F = degrees Fahrenheit
^{o}C = degrees Celsius
PCD = pollution control device
MassDEP = Massachusetts Department of Environmental Protection
CFR = Code of Federal Regulations
USEPA = United States Environmental Protection Agency
CMR = Code of Massachusetts Regulations

Table 4	
EU#	**Record Keeping Requirements**
1, 2	1. The Permittee shall record, for each Green Fuels America, Inc. FuelMatic GSX20 processor, the amount of biodiesel produced on a monthly and 12 consecutive month period;
	2. The Permittee shall record, for each Green Fuels America, Inc. FuelMatic GSX20 processor, the gallons of methanol used on a daily basis.
	3. The Permittee shall continuously record the exit (product side) temperature (^{o}C/^{o}F) of each glycol chilled condenser (PCD #1 and PCD #2).
	4. The Permittee shall continuously record the coolant flow rate (gal/min) to each glycol chilled condenser (PCD #1 and PCD #2).

Table 4	
EU#	**Record Keeping Requirements**
1, 2	5. The Permittee shall keep a log to document monthly the following: a. Testing of the coolant temperature alarm; b. Testing of the coolant low-flow alarm; and c. Calibration of flow meters.
	6. The Permittee shall record the instances of any high temperature and/or low-flow conditions to PCD #1 and/or PCD #2 as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established in Table 2 or during the most recent performance test are exceeded. The record shall include the time of the alarm, cause of the alarm, action taken, and time that the alarm was cleared.
	7. As contained in 40 CFR §63.665(g)(2), the Permittee shall keep records of any periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded during any 3-hour period of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (1 1 °F) above the average exit (product side) operating temperature during the most recent performance test.
	8. As contained in 40 CFR §63.665(h), the Permittee shall keep up-to-date, readily accessible records of: a. Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or a distillation unit; b. Any recalculation of the TRE index value performed pursuant to 40 CFR §60.664 (g); and c. The results of any performance test performed pursuant to the methods and procedures required by 40 CFR §60.664 (e).
	9. The Permittee shall keep a dailly log of air sparger flow rates. The log shall identify the sparger name/number, date of testing, flow rate (scfm), and indicate any flow rate adjustments made.
3, 4, 5, 6	10. The Permittee shall record the dimensions and capacity of each storage vessel.
	11. The Permittee shall record on a monthly and 12 consecutive month basis: a. The throughput (gallons) of each storage tank; b. The working and breathing losses of VOC/HAP for each tank; c. The VOC/HAP tank truck loading losses.
Facility-wide	12. The Permittee shall, upon implementation of a facility leak detection and repair program, keep records using the procedures of 40 CFR Part 60 Subpart VVa, as applicable.
	13. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve month period (current month plus prior eleven months). These records shall be compiled no later than the 15th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/dep/air/approvals/aqforms.htm#report .

Table 4	
EU#	**Record Keeping Requirements**
Facility-wide	14. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	15. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site.
	16. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	17. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and PCD(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	18. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	19. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.
	20. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.

Table 4 Key:

EU# = Emission Unit Number
PCD = Pollution Control Device
TRE = Total Resource Effectiveness
^{o}F = degrees Fahrenheit
CFR = Code of Federal Regulations
scfm = standard cubic feet per minute
SOMP = Standard Operating and Maintenance Procedure
USEPA = United States Environmental Protection Agency
MassDEP = Massachusetts Department of Environmental Protection
CMR = Code of Massachusetts Regulations
gal/min = gallons per minute

Table 5	
EU#	**Reporting Requirements**
1	1. Within 45 days of the performance testing, the Permittee shall submit the performance test data and results including, but not limited to: a. the control efficiency of the Bell & Gossett model #CHSX 6241L Shell & Tube Condenser; b. an identification of all process vents by name and type including the acceptable pressure set point or range; c. a detailed calculation of the net heating value of the gas stream; d. the total resource effectiveness (TRE) value for the vent stream using measurements from the performance test; and e. flow rate setting of each air sparger during the testing.
1, 2	2. The Permittee shall notify MassDEP, Western Region, within 14 days of when each Green Fuels unit is installed and operational.
	3. The Permittee shall submit to the MassDEP, Western Region, semiannual reports containing the reporting requirements of 40 CFR §60.665(l). The initial report shall be submitted within 6 months after the initial start-up date. Semiannual reporting shall include two compliance summaries: one by January 30 for the time period July – December of the previous calendar year, and the other by July 30 for the time period January – June of the current calendar year.
	4. As contained in 40 CFR §63.664(g)(1), where the recalculated TRE index value is less than or equal to 1.0, the Permittee shall notify MassDEP, Western Region, within 1 week of calculation and shall conduct a performance test according to the methods and procedures required by 40 CFR §60.664 in order to determine compliance with 40 CFR §60.662(a).
Facility-wide	5. Pursuant to 310 CMR 7.12(1)(a)7., the Permittee is required to file Source Registration every three years as a condition of this Plan Approval.
	6. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	7. The Permittee shall notify the Western Regional Office of MassDEP, BAW Section Chief by telephone (413) 755-2115, email, marc.simpson@state.ma.us or fax (413) 784-1149, as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to the Section Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	8. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP's request.

Table 5	
EU#	**Reporting Requirements**
Facility-wide	9. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	10. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

Table 5 Key:

EU# = Emission Unit Number
BAW = Bureau of Air and Waste
CFR = Code of Federal Regulations
MassDEP = Massachusetts Department of Environmental Protection
CMR = Code of Massachusetts Regulations

Table 5 Notes: none

4. SPECIAL TERMS AND CONDITIONS

The Permittee is subject to, and shall comply with, the following special terms and conditions:

A. The Permittee shall comply with the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU#	**Special Terms and Conditions**
1, 2	1. The Permittee shall record, on a monthly basis, the gallons of catalyst solution used in the transesterification process.
	2. The Permittee shall record, on a monthly basis, the gallons of glycerin byproduct produced and whether the glycerin byproduct was treated as a waste or sold.
	3. The Permittee shall record, on a monthly basis, the amount (gallons) of methanol used to regenerate the purification columns. Records shall include, but not be limited to, the date of purification column regeneration and amount used.
	4. Spent purification column resin and spent methanol from the purification column regeneration process shall be kept in closed containers and be clearly labeled.

Table 6	
EU#	**Special Terms and Conditions**
1, 2	5. The Permittee shall install a Bell & Gossett model #CHSX 6241L Shell & Tube Condenser (or equivalent in the case of EU 2) on each process unit, each with a design control efficiency of 87%.
	6. The Bell & Gossett model #CHSX 6241L Shell & Tube Condenser (or equivalent for EU 2) and Mokon ALT-2 Iceman portable glycol chiller shall operate at all times that EU 1and/or EU 2 are operating. Each chilled condenser shall control VOC/HAP emissions from no more than one process unit (EU 1 or EU 2) at a time.
	7. The Permittee shall operate the circulating coolant temperature alarm system on the Mokon ALT-2 Iceman portable glycol chiller at all times the biodiesel production process is operating, except for periods of calibration checks, zero and span adjustments, preventive maintenance, and malfunction(s).
	8. The Permittee shall operate and maintain the Bell & Gossett model #CHSX 6241L Shell & Tube Condenser and the Mokon ALT-2 Iceman portable glycol chiller (or equivalent for EU 2) in accordance with the manufacturer's recommendations or in accordance with other written procedures in order to ensure that the condenser is operated at its designed heat transfer efficiency.
	9. The Permittee shall determine, within 30 days after start-up, the process vent pressure settings and shall test the vents and vent pressures on a monthly basis thereafter. A log of testing shall identify the vent name/number, date of testing, results and any corrective action taken.
	10. The Permittee shall notify MassDEP in writing 45 days prior to installation of an acid pre-treatment system. The notification shall include an assessment of the acid pre-treatment system's potential to emit VOCs/HAPs on a monthly and 12 consecutive month basis.
Facility-wide	11. The Permittee shall, within 30 days of initial start-up, update MassDEP with stack parameters for Table 7.
	12. The facility has stated in the application to this Plan Approval that *Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which* Construction, *Reconstruction, or Modification Commenced After November 7, 2006* (40 CFR Part 60, Subpart VVa) is applicable. Since MassDEP has not accepted delegation for Subpart VVa for sources which are not subject to 310 CMR Appendix C, the Permittee is advised to consult with EPA Region 1 at 5 Post Office Square, Suite 100, Boston, MA 02109-3912, telephone: (617)918-1111. Other applicable requirements may include notification, record keeping, and reporting requirements.
	13. The facility has stated in the application to this Plan Approval that the *Standards of Performance for* VOC *Emissions from Synthetic Organic Chemical Manufacturing Industry ("SOCMI") Distillation* Operations (40 CFR Part 60, Subpart NNN) is applicable. Since MassDEP has not accepted delegation for Subpart NNN for sources which are not subject to 310 CMR Appendix C, the Permittee is advised to consult with EPA Region 1 at 5 Post Office Square, Suite 100, Boston, MA 02109-3912, telephone: (617)918-1111. Other applicable requirements may include notification, record keeping, and reporting requirements.

Table 6	
EU#	**Special Terms and Conditions**
Facility-wide	14. The Permittee shall institute the following BMPs: a. Store all VOC-containing materials used for surface preparation, cleaning, and rework in closed containers; b. Ensure that mixing and storage containers used for VOC-containing materials used for surface preparation, cleaning and rework are kept closed at all times except when depositing or removing these materials; c. Minimize spills of VOC-containing materials used for surface preparation, cleaning, and rework; d. Convey VOC-containing materials used for surface preparation, cleaning, and rework from one location to another in closed containers or pipes; e. Minimize VOC emissions from cleaning of application, storage, mixing, and conveying equipment by ensuring that: i. equipment cleaning is performed without atomizing the cleanup solvent; and ii. all spent solvent is captured in closed containers; iii. Store and dispose of all absorbent materials, such as cloth or paper that are contaminated with VOC-containing materials used for surface preparation, cleaning, and rework in non-absorbent containers that shall be kept closed except when placing materials in or removing materials from the container..
	15. Any prior Plan Approvals issued under 310 CMR 7.02 shall remain in effect unless specifically changed or superseded by this Plan Approval. The Facility shall not exceed the emission limits and shall comply with approved conditions specified in the prior Plan Approval(s) unless specifically altered by this Plan Approval.

Table 6 Key:

EU# = Emission Unit Number
VOC = volatile organic compound
% = percent
EPA = Environmental Protection Agency
CMR = Code of Massachusetts Regulations
HAP = Hazardous Air Pollutant
MassDEP = Massachusetts Department of Environmental Protection

B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.” The Permittee

shall install and utilize exhaust stacks with the following parameters, as contained in Table 7 below, for the Emission Units that are regulated by this Plan Approval:

Table 7

EU#	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions *(Choose units of measure)*	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (^{o}F)
PCD #1	*	*	*	*
To be updated by Northeast Biodiesel per Table 6, Provision 11				
PCD #2	*	*	*	*

Table 7 Key:

EU# = Emission Unit Number
PCD = Pollution Control Device
^{o}F = Degree Fahrenheit
* = to be updated by Northeast Biodiesel per Table 6, Provision 11.

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).

B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.

C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.

D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.

F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.

G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.

H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.

I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.

J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.

K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Amy Stratford by telephone at (413) 755-2144, or in writing at the letterhead address.

Marc Simpson
Section Chief
Bureau of Air and Waste

ecc: MassDEP/Boston - Yi Tian
MassDEP/WERO – Peter Czapienski
Kevin Rose; HDR, Inc